

CLAIMS

- 1 1. (Canceled).
- 1 2. (Previously Presented) The device of claim 18, wherein the validation circuit indicates
2 when the sense amplifier has sufficiently settled on a sensed condition of the buried fuse.
- 1 3. (Previously Amended) The device of claim 2, further comprising:
2 a power control circuit for powering the buried fuse reading device up and down; and wherein
3 the validation circuit indicates when the sense amplifier has sufficiently settled on a sensed
4 condition once the power control circuit begins powering up the buried fuse reading device.
- 1 4. (Original) The device of claim 3, further comprising:
2 a bias generating circuit for generating first and second voltages; and wherein the sense amplifier
3 operates based on the first and second voltages.
- 1 5. (Original) The device of claim 4, wherein the validation circuit operates based on the
2 first and second voltages.
- 1 6. (Original) The device of claim 5, wherein
2 the sense amplifier includes a first PMOS transistor and a first NMOS transistor connected in
3 series with the buried fuse, a gate of the first PMOS transistor receiving the first voltage and a gate of the
4 first NMOS transistor receiving the second voltage; and
5 the validation circuit includes a second PMOS transistor and a second NMOS transistor
6 connected in series, a gate of the second PMOS transistor receiving the first voltage and a gate of the
7 second NMOS transistor receiving the second voltage, the second PMOS and NMOS transistor being
8 weaker than the first PMOS and NMOS transistor, respectively.
- 1 7. (Previously Presented) The device of claim 18, comprising:
2 a plurality of buried fuses; and
3 a sense amplifier associated with each of the buried fuses.
- 1 8. (Currently Amended) The device of claim 18, wherein[[,]] an output from the validation
2 circuit ~~dynamically adjusts~~ identifies a validation point that is dynamically adjusted based on the sense
3 amplifier operating conditions, the validation point being a point in time when the sense amplifier output
4 is considered valid.
- 1 9. (Original) The device of claim 8, further comprising:
2 a power control circuit for powering the buried fuse reading device up and down; and wherein
3 the validation point is the point in time when output from the sense amplifier is considered valid
4 once the power control circuit begins powering up the buried fuse reading device.
- 1 10. (Original) The device of claim 9, further comprising:
2 a bias generating circuit for generating first and second voltages; and wherein
3 the sense amplifier operates based on the first and second voltages.
- 1 11. (Original) The device of claim 10, wherein the validation circuit operates based on the
2 first and second voltages.
- 1 12. (Original) The device of claim 11, wherein

2 the sense amplifier includes a first PMOS transistor and a first NMOS transistor connected in
3 series with the buried metal fuse, a gate of the first PMOS transistor receiving the first voltage and a gate
4 of the first NMOS transistor receiving the second voltage; and

5 the validation circuit includes a second PMOS transistor and a second NMOS transistor
6 connected in series, a gate of the second PMOS transistor receiving the first voltage and a gate of the
7 second NMOS transistor receiving the second voltage, the second PMOS and NMOS transistor being
8 weaker than the first PMOS and NMOS transistor, respectively.

1 13. (Original) The device of claim 8, comprising:
2 a plurality of buried fuses; and
3 a sense amplifier associated with each of the buried fuses.

1 14. (Canceled).

1 15. (Previously Presented) The device of claim 18, comprising:
2 a power control circuit for powering the buried fuse reading device up and down.

1 16. (Previously Presented) The device of claim 15, wherein the sense amplifier and the
2 validation circuit draw substantially no current when the power control circuit has the buried fuse reading
3 device powered down.

1 17. (Previously Presented) A buried fuse reading device, comprising:
2 a buried fuse;
3 a sense amplifier including a first PMOS transistor and a first NMOS transistor connected in
4 series with the buried fuse, a gate of the first PMOS transistor receiving a first voltage and a gate of the
5 first NMOS transistor receiving a second voltage; and
6 a validation circuit including a second PMOS transistor and a second NMOS transistor connected
7 in series, a gate of a second PMOS transistor receiving the first voltage and a gate of a second NMOS
8 transistor receiving the second voltage, the second PMOS transistor and second NMOS transistor being
9 weaker than the first PMOS transistor and first NMOS transistor, respectively.

1 18. (Currently Amended) A buried fuse reading device, comprising:
2 at least one buried fuse;
3 at least one sense amplifier sensing a condition of the buried fuse; and
4 a validation circuit mimicking, ~~with a delay~~, the sense amplifier regardless of the state of the at
5 least one buried fuse, and indicating when the sense amplifier output is valid, wherein the validation
6 circuit is the same as the at least one sense amplifier except that the validation circuit includes weaker
7 components.

1 19. (Canceled)

1 20. (Previously Presented) The device of claim 18, wherein the validation circuit is
2 connected in parallel with the at least one sense amplifier and the at least one buried fuse.

1 21. (New) A buried fuse reading device, comprising:
2 a bias generating circuit adapted to generate first and second bias voltages;
3 at least one buried fuse;
4 at least one sense amplifier adapted to generate, based on the first and second bias voltages, an
5 output indicating a condition of the buried fuse; and

6 a validation circuit adapted to track the operation of the sense amplifier to generate, based on the
7 first and second bias voltages, an output indicating when the output of the sense amplifier is valid,
8 wherein:

9 when the device is powered up, the bias generating circuit causes the first and second
10 bias voltages to transition to different levels at two different times, which in turn causes the output of the
11 validation circuit to transition to a different level; and

12 the transition of the output of the validation circuit to the different level indicates when
13 the output of the sense amplifier is valid.

1 22. (New) The device of claim 21, wherein each of the sense amplifier and the validation
2 circuit are implemented using one or more transistors, wherein the one or more transistors of the
3 validation circuit are weaker than the one or more transistors of the sense amplifier.

1 23. (New) The device of claim 21, wherein the device comprises:
2 a plurality of buried fuses; and
3 a sense amplifier associated with each of the buried fuses.

1 24. (New) The device of claim 21, wherein the timing of the transition of the output of the
2 validation circuit is dynamically adjusted based on the operating conditions of the device.

1 25. (New) The device of claim 21, wherein the sense amplifier and the validation circuit
2 draw substantially no current when the device is powered down.